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02127
B-Pre-Con

HPIC/TDS/D-715-17
1 March 1967

MEMORANDUM FOR: Director, National Photographic Interpretation Center

THROUGH: Chief, Support Staff

SUBJECT: Request for Approval of Acuity Adapters for [redacted] Project with [redacted] from FY 1967 Funding.

REFERENCE: Chief, Administrative Staff, O/DBS Memorandum of 4 February 1964 on Approval of R&D Activities.

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1. The Acuity Adapters for [redacted] eyepieces project was soon prepared for your approval in order for contract negotiations to be carried out in FY-1967. This project calls for the development of five sets of optically corrective devices in a three month effort.
2. The attached staff study, tab, and contract proposal present pertinent information and justification for this project.
3. It is recommended that this project be approved at a [redacted] level of [redacted] in FY-1967.

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[redacted]
Colonel, USAF
Assistant for Technical Development, HPIC

Attachments: s/a

APPROVED: [redacted]
ARTHUR C. LUNDANE
Director
National Photographic Interpretation Center

MAR 1967
Date

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- Distribution:**
- Orig - HPIC/SS/LB (After Approval)
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GROUP 1
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23 February 1967

ACUITY ADAPTERS FOR [] EYEPIECES - STAFF STUDY 02127

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1. PROBLEM:

To develop a device which will permit a photo interpreter to set his own ophthalmic correction on a stereoscope eyepiece, thereby optically optimizing the microscope for his personal use and making it unnecessary for him to wear glasses while looking through the instrument.

2. BACKGROUND:

In August of 1964 the Imagery Analysis Staff received a recommendation from [] of the Optics Panel Scientific Advisory Board, that an ophthalmic correction device be developed and tested for use by photo interpreters. He believes that interpreters using this device would not only see better but would experience considerably less eye fatigue than if they were to wear their own glasses as they now do. Following this recommendation CIA/IAS requested that the Technical Development Staff investigate the possibility of providing the type of adapters suggested by []

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3. DISCUSSION:

a. Current Procedures. Photo interpreters who require ophthalmic corrective devices must wear eyeglasses when using a microstereoscope.

b. Origin of Concept. This concept of individual adjustable eyepieces containing integral ophthalmic corrective prescriptions, originally suggested by [] in his capacity as a member of the Optics Panel Scientific Advisory Board, is based on theoretical and empirical findings that eyestrain and fatigue are materially lessened when optimum optical aids are employed by individuals doing visually exacting tasks such as those involved in the photointerpretation process.

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c. Proposed Program. The proposed program will provide five separate matched sets of acuity adapters, each uniquely designed for an individual within the photo interpretation group. The initial five photointerpreters were selected to provide a test sample and will represent a cross section of the visual anomalies found among a represent-

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ative group of individuals, e.g. astigmatism and myopia. These five sets are to be tested operationally to prove the feasibility of the concept.

d. Selection of the contractor. This contract is to be awarded on a sole source basis because it is too small to solicit on a broad participation basis. [redacted] has been selected on the premise that the acuity adapters are to be designed for a [redacted] viewing instrument and on the acknowledged technical competence of the firm itself. Should the initial five sets serve to prove [redacted] hypothesis, competitive bids will be solicited to procure a larger quantity.

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e. Contract Period. The acuity adapters are estimated to be deliverable within two or three months from initiation of the contract.

f. Coordination. Internal and external coordination has been part of the project since its inception. The appropriate technical personnel of PAG, CIA/IAS and TID have been briefed on this project. This project has been coordinated with DDS&T/ORD and presented to the Committee on Photographic Exploitation and representatives of Army, Navy and Air Force.

g. Alternative. There are two obvious alternatives to the development of acuity adapters:

1. Use of contact lenses.
2. Continuation of present procedures.

The use of contact lenses poses a problem of inducing the photo interpreter to accept them. Indications are that many photo interpreters would probably not accept the use of contact lenses as readily as acuity adapters, and they cannot legally be forced to use them. The expense of contact lenses would probably be about equal to acuity adapters. As explained above, the second alternative is unacceptable.

5. RECOMMENDATIONS:

It is recommended that approval to contract with [redacted] of FY-67 funds for a three-month effort.

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6. REFERENCE AND ATTACHMENTS:

- Tab A. Catalog Form
- Tab B. Development Objectives
- Attachment: [redacted] Proposal

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R & D CATALOG FORM		DATE
1. PROJECT TITLE/CODE NAME Acuity Adapters for <input type="checkbox"/> Eyepieces		10 February 1967
2. SHORT PROJECT DESCRIPTION The fabrication of acuity adapters for microscope eyepieces so that each interpreter may have his own, unique, ophthalmic correction.		25X1
3. CONTRACTOR NAME	4. LOCATION OF CONTRACTOR	
<input type="checkbox"/>		25X1
5. CLASS OF CONTRACTOR Manufacturer	6. TYPE OF CONTRACT Fixed Price	
7. FUNDS	8. REQUISITION NO.	9. BUDGET PROJECT NO.
FY 19 \$ None		NP-V-12-02127
FY 19 \$ <input type="checkbox"/>	10. EFFECTIVE CONTRACT DATE (Begin - end) March - May 1967	11. SECURITY CLASS. 25X1 AA-Confidential T-Unclassified W-Unclassified
FY 19 \$ None		
12. RESPONSIBLE DIRECTORATE/OFFICE/PROJECT OFFICER TELEPHONE EXTENSION DDI/NPIC/TDS <input type="checkbox"/>		25X1
13. REQUIREMENT/AUTHORITY Both medical and psychophysical experts have deemed this method superior to glasses and contact lenses for refractive correction during photo interpretation.		
14. TYPE OF WORK TO BE DONE Engineering Development		
15. CATEGORIES OF EFFORT		
MAJOR CATEGORY	SUB-CATEGORIES	
Viewing Systems	Lenses	
	Microscopes	
16. END ITEM OR SERVICES FROM THIS CONTRACT/IMPROVEMENT OVER CURRENT SYSTEM, EQUIPMENT, ETC. Five separate prototype adapter sets, cases and instructions.		
17. SUPPORTING OR RELATED CONTRACTS (Agency & Other)/COORDINATION There is no known equipment available or under development which will satisfy this requirement. This project has been coordinated with: DDS&T/ORD, and presented to the committee on Photographic Exploitation and representatives of the Army, Navy and Air Force.		
18. DESCRIPTION OF INTELLIGENCE REQUIREMENT AND DETAILED TECHNICAL DESCRIPTION OF PROJECT (Continue on additional page if required) A device is needed which will permit photo interpreters, who normally wear standard corrective eyeglasses, to remove them and still be able to properly utilize stereoscopes. There is reason to believe that this can be done by adding the proper corrective ophthalmic prescription to the stereoscope eyepieces themselves. There is some medical opinion that indicates that this would not only enable the PI to see better but would also serve to lessen overall eye fatigue.		
19. APPROVED BY AND DATE		
OFFICE	DEPUTY DIRECTOR	DDC1

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23 February 1967

DEVELOPMENT OBJECTIVES

ACUITY ADAPTERS FOR [REDACTED] 10X EYEPIECES

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1. INTRODUCTION.

These development objectives describe the requirements to be met in the design and fabrication of acuity adapters (Ophthalmic corrective devices) for the [REDACTED] Standard 10X eyepieces as currently used with the Zoom 70 Stereoscope.

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2. CONCEPT.

A device is needed which will permit photo interpreters, who normally wear standard corrective eyeglasses, to remove them and still be able to properly utilize microstereoscopes. It appears that this can be done by adding the proper corrective ophthalmic prescription to the stereoscope eyepieces themselves. There is some medical opinion which indicates that this would not only enable the PI to see better but would also serve to lessen overall eye fatigue.

3. REQUIREMENTS.

3.1. Configuration. The prototype holders for the corrective optics must clip or clamp onto the standard [REDACTED] 10X eyepiece as used with the Zoom 70 Stereoscope, and must be easily interchangeable from one eyepiece to another. The present color filter holder produced by [REDACTED] is an example of a device which might be suitably modified for this particular application.

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3.2. Lenses. Each set of two acuity adapters must have lenses ground to the prescriptions to be provided by the sponsor. The lenses shall be firmly and positively affixed to the holders to avoid the possibility of accidentally becoming separated from them. The optical performance of the lenses must equal or exceed that of a standard eye glass configurations of the same prescription.

3.3. Index Marks. Each acuity adapter must be individually marked L (for Left) or R (for Right) as appropriate and have another mark to indicate the top of the eyepiece. In addition each set of acuity adapters must have matched serial numbers engraved upon them to permit easy identification and to prevent inadvertent separation of sets.

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3.4. Carrying Case. Each acuity adapter set must be provided with a fitted carrying case to provide proper protection and storage when the adapters are not in use.

3.5. General Design. The acuity adapter should be as light and compact as possible without being fragile.

3.6. A total of 5 sets of two adapters each shall be provided as part of this contract.

3.7. At the time of delivery of the adapters the contractor shall also provide 10 copies of simple Users Instructions.

3.8. A carrying case shall be provided for each set of adapters.

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